

AMENDMENT TO THE CLAIMS

The following claim set replaces all prior versions, and listings, of claims in the application:

1. (currently amended) A method ~~of treating pulp such as for controllably thickening a pulp comprised of a low consistency fiber suspension, suspensions of the paper and wood processing industry~~, said method comprising the steps of:

introducing a pulp comprised of a low consistency fiber suspension pulp into a pre-thickener apparatus at a feeding pressure, the pre-thickener apparatus having a filter surface, a shaft and a cleaning member attached to the shaft, and a space defined between the shaft and the cleaning member,

removing liquid from a portion of the pulp in said pre-thickener apparatus essentially by means of the effect of the feeding pressure of the pulp into the pre-thickener apparatus to form a thickened pulp, a filtrate, and an essentially unthickened pulp,

allowing a layer of the thickened pulp to be formed on the filter surface of the pre-thickener apparatus,

wiping said the layer of the thickened pulp off the filter surface of said pre-thickener apparatus with the cleaning member by pushing the layer of the thickened pulp by the cleaning member in an essentially axial direction along the filter surface to the discharge end of the pre-thickener apparatus, while simultaneously allowing the essentially non-thickened pulp to flow through the apparatus from the feeding end to the discharge end via the space defined between the shaft and the cleaning member, and

discharging from the pre-thickener apparatus the thickened pulp wiped from the layer of the thickened pulp and the filtrate, from said pre-

~~thickener apparatus, and wherein said method further comprises the steps of;~~
~~pushing the layer of thickened pulp by said cleaning member along said filter surface to the discharge end of the pre-thickener apparatus in essentially an axial direction, while simultaneously allowing the essentially non thickened pulp to flow through the apparatus from the feeding end to the discharge end via the space between said cleaning member and a shaft of the apparatus;~~
~~guiding a part of said the essentially non-thickened pulp flow to a portion of the filter surface being wiped by the cleaning member;~~
~~regulating the flow speed of the pulp in the pre-thickener apparatus by means of valves for the filtrate and the thickened pulp; and~~
~~controlling the thickening of the pulp in response to input power or input torque of the cleaning member or in response to a pressure difference prevailing over the filter surface.~~

2. (previously presented) A method according to claim 1, comprising supplying pulp to said pre-thickener apparatus from a screen, the screening consistency of which is about 2 – 4 %.

3. (previously presented) A method according to claim 1, wherein the pulp thickened by the pre-thickener apparatus is taken into a filter, the feeding consistency of which is 3 – 6 %.

4. (previously presented) A method according to claim 2, wherein between the screen and the filter the consistency of the pulp is raised by said pre-thickener by 1 – 4 %.

5. (previously presented) A method according to claim 1, comprising rotating the cleaning member at a rotational sped sufficient to create a flow speed for the thickened

layer of pulp of less than 3 m/s towards the discharge end of the pre-thickener apparatus.

6. (previously presented) A method according to claim 5, wherein said flow speed of the thickened layer of pulp is between 0.2-1.0 m/s, preferably about 0.5 m/s.

7. (previously presented) A method according to claim 1, wherein the cleaning member comprises a rotatable screw, and wherein the feeding speed of the screw and the flow speed of the non-thickened pulp are essentially the same at the discharge end of the apparatus.

8. (previously presented) A method according to claim 1, further comprising using a pump so as to create the feeding pressure of the pre-thickener apparatus.

9. (currently amended) A method according to claim 1, wherein said step of controlling the thickening of the pulp further comprises by regulating the flow of incoming pulp, filtrate and/or thickened pulp with valves.

10. (cancelled)

11. (previously presented) A method according to claim 9, further comprising regulating the consistency of the thickened pulp to a desired value by changing a flow amount ratio between the thickened pulp and the filtrate.

12. (previously presented) A method according to claim 9, further comprising regulating the consistency of the thickened pulp to a desired value by changing a flow amount ratio between the low consistency pulp to be thickened and the filtrate.

13. (cancelled)

14. (previously presented) A method according to claim 9, wherein said step of controlling the thickening of the pulp comprises maintaining a constant pressure difference over the filter surface.

15. (previously presented) A method according to claim 9, wherein said step of controlling the thickening of the pulp further comprises controlling the thickening of the pulp in response to a process signal obtained from a previous or later process stage.

16. (previously presented) A method according to claim 1, wherein said step of controlling the thickening of the pulp further comprises changing the rotational speed of the cleaning member.

17. (previously presented) A method according to claim 1, further comprising using said filtrate for dilution in a previous process stage.

18. (previously presented) A method according to claim 1, further comprising using said filtrate for dilution in the same process stage.

19. (previously presented) A method according to claim 1, further comprising separating fibers from said filtrate by a fiber separating means prior to reusing the filtrate.

20 - 25. (canceled)

26. (currently amended) A method of treating pulp such as for controllably thickening a pulp comprised of a low consistency fiber suspension, suspensions of the paper and wood processing industry, said method comprising the steps of:

introducing a pulp comprised of a low consistency fiber suspension pulp into a pre-thickener apparatus at a feeding pressure, the pre-thickener apparatus having a filter surface, a shaft and a cleaning

member attached to the shaft, and a space defined between the shaft and the cleaning member,
removing liquid from a portion of the pulp in said pre-thickener apparatus essentially by means of the effect of the feeding pressure of the pulp into the pre-thickener apparatus to form a thickened pulp, a filtrate, and an essentially unthickened pulp,
wiping said the layer of the thickened pulp off the filter surface of said pre-thickener apparatus with the cleaning member by pushing the layer of the thickened pulp by the cleaning member in an essentially axial direction along the filter surface to the discharge end of the pre-thickener apparatus, while simultaneously allowing the essentially non-thickened pulp to flow through the apparatus from the feeding end to the discharge end via the space defined between the shaft and the cleaning member, and
discharging from the pre-thickener apparatus the thickened pulp wiped from the layer of the thickened pulp and the filtrate, from said pre-thickener apparatus, and wherein said method further comprises the steps of:
pushing the layer of thickened pulp by said cleaning member along said filter surface to the discharge end of the pre thickener apparatus in essentially an axial direction, while simultaneously allowing the essentially non thickened pulp to flow through the apparatus from the feeding end to the discharge end via the space between said cleaning member and a shaft of the apparatus,
guiding a part of said the essentially non-thickened pulp flow to a portion of the filter surface being wiped by the cleaning member;
controlling the thickening of the pulp by regulating the flow of incoming pulp, filtrate and/or thickened pulp with valves; and

controlling the valves in response to input power or input torque of the cleaning member or in response to a pressure difference prevailing over the filter surface or in response to a process signal obtained from a previous or later process stage.